

## **ABSTRACT OF THE DISCLOSURE**

This invention defines a highly programmable MAC architecture for handling protocols that require precision timing and demand very short response times. The Media Access Controller consists of micro-coded programmable co-processors and general purpose CPUs. CPUs perform processing intensive functions while co-processors perform PHY specific media access control functions. The uniqueness of the architecture is in the real-time programmability of the co-processors; they can be reprogrammed by the CPUs based on the calculations performed in the CPU domain.

Any embodiment of this invention is suitable for ASIC, FPGA, discrete or combinations of these implementation schemes. The invention applies to any communications technology.

## REFERENCES INCORPORATED BY REFERENCE HEREIN

- [1] HomePlug Alliance web site:  
<http://www.homeplug.org>
- [2] "*HomePlug Standard Brings Networking to the Home*";  
By Steve Gardner, Brian Markwalter and Larry Yonge;  
Communications System Design Magazine; December 2000,  
Vol. 16, No. 12.
- [3] ETSI TS 101 867 V1.1.1 (2000-11); Technical Specification --  
Powerline Telecommunications (PLT); "*Coexistence of Access and  
In-House Powerline Systems*"; Reference: DTS/PLT-00004;  
November 2000.